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Antimuscarinic treatment for lung diseases from research to clinical practice.

Disse B.

Therapeutic Area Respiratory Diseases, Boehringer Ingelheim GmbH, Germany. disse@ing.boehringer-ingelheim.com

Inhaled antimuscarinic drugs are the treatment of choice, recommended by guidelines, in chronic obstructive pulmonary disease (COPD). In long-term clinical studies ipratropium shows important effects beyond relaxation of airway smooth muscle, e.g. reduction of exacerbations of COPD. In phase III clinical trials the new generation antimuscarinic tiotropium, inhaled once daily, has provided more than 24 hours of stable bronchodilation, that was sustained over the one year treatment period. In addition, tiotropium in comparison to placebo and even ipratropium, has been shown to provide improvement in dyspnea, reduction of exacerbations of COPD, reduced hospital admissions for exacerbations, reduced duration of hospitalisations as well as improved health-related quality of life. Chronic effects, such as reduction of hospitalisations, are conventionally attributed to an anti-inflammatory action and not to symptomatic bronchodilation. The 24 hour stabilisation of airway patency, avoiding fluctuations of the diameter with occasional closure and consequent need for reopening, may explain the extended therapeutic profile of tiotropium. Inhibition by antimuscarinics of pro-inflammatory cholinergic effects may also occur, e.g. inhibition of 5-HETE release from epithelial cells and inhibition of release of neutrophil and eosinophil chemotactic activity from alveolar macrophages. Antimuscarinics have shown increasing value as a therapeutic approach in COPD. The elucidation of their anti-inflammatory potential constitutes an interesting target for future studies.

Publication Types:

- Review
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